Grade 9 Academic
Unit/Chapter: Linear Equations

Lesson: $\quad 25$
Topic: Solving a Linear System Graphically
\# homework check: NPM 9 p. 236 \#4-7, 13
It note: Solving a Linear System Graphically
When two lines are graphed on the same coordinate axes, they tend to intersect. This point of intersection is the solution to the system in the form of a point with specific coordinates that make each equation true. Sometimes a solution cannot be determined because the lines will never intersect. This happens when the lines are parallel. When the equations are multiples of one another, or written in another form, there can be infinite solutions because the lines lie on top of one another. When you are searching for a graphical solution, it is important to use a sharp pencil, ruler and a grid to ensure accuracy. For example, find the solution to each of the following systems.

$$
\begin{aligned}
& y=\frac{1}{2} x+2 \\
& 2 x-y+5=0
\end{aligned}
$$



Therefore, the point of intersection is $(-2,1)$.

$$
y=-3 x+1
$$

$$
x-y-3=0
$$



Therefore, the POI is $(1,-2)$.
$y=\frac{1}{3} x+2$
$x-3 y-9=0$


Therefore, there is no POI. The lines are parallel and do not intersect.
\# homework assignment: NPM 9 p. 245 \# 2, 3, 6, 8, 9, 12

